

What is claimed is:

1           1.       A method of controlling communications in a wireless network  
2 comprising:  
3               receiving, in a wireless network controller, an indicator in a message sent  
4 by a mobile station to establish a data transfer session in the wireless network; and  
5               selecting one of plural types of protocol stacks to use for communications  
6 over an air link between the wireless network controller and mobile station based on the  
7 indicator.

1           2.       The method of claim 1, wherein selecting one of plural types of protocol  
2 stacks comprises selecting from protocol stacks comprising a GERAN protocol stack.

1           3.       The method of claim 2, wherein selecting one of plural types of protocol  
2 stacks comprises selecting from plural stacks comprising the GERAN protocol stack and  
3 an EGPRS protocol stack.

1           4.       The method of claim 1, wherein selecting one of plural types of protocol  
2 stacks comprises selecting from protocol stacks comprising an EGPRS protocol stack.

1           5.       The method of claim 1, wherein receiving the indicator comprises  
2 receiving a Temporary Logical Link Identity structure having one of plural values.

1           6.       The method of claim 5, wherein selecting one of plural types of protocol  
2 stacks comprises selecting a first protocol stack if the Temporary Logical Link Identity  
3 structure has a first value.

1           7.       The method of claim 6, wherein selecting one of plural types of protocol  
2 stacks further comprises selecting a second protocol stack if the Temporary Logical Link  
3 Identity structure has a second value.

1           8.       The method of claim 1, wherein selecting one of plural types of protocol  
2 stacks comprises selecting a first protocol stack if the indicator has a first value and  
3 selecting a second protocol stack if the indicator has a second value.

1           9.       The method of claim 1, wherein receiving the indicator comprises  
2 receiving a parameter used for contention resolution.

1           10.      The method of claim 9, further comprising performing contention  
2 resolution using the parameter.

1           11.      The method of claim 9, wherein receiving the parameter comprises  
2 receiving a Temporary Logical Link Identity.

1           12.      The method of claim 9, wherein receiving the parameter comprises  
2 receiving a GERAN Contention Resolution Identity.

1           13.      The method of claim 1, wherein receiving the indicator comprises  
2 receiving one of plural training sequences.

1           14.      A system comprising:  
2                    an interface to an air link to communicate with mobile stations; and  
3                    a controller adapted to perform contention resolution with a first type  
4 mobile station using a first type of indicator, the controller adapted to communicate  
5 signaling according to a first wireless protocol with the first type of mobile station, and  
6                    the controller adapted to perform contention resolution with a second type  
7 of mobile station using a second type of indicator, the controller adapted to communicate  
8 signaling according to a second wireless protocol with the second type of mobile station.

1           15.      The system of claim 14, wherein the first wireless protocol comprises a  
2 GERAN wireless protocol.

1           16.     The system of claim 15, wherein the second wireless protocol comprises  
2 an EGPRS wireless protocol.

1           17.     The system of claim 14, wherein the first wireless protocol comprises an  
2 EGPRS wireless protocol.

1           18.     The system of claim 14, wherein the first type of indicator comprises a  
2 Temporary Logical Link Identity (TLLI) structure having a first value, and the second  
3 type of indicator comprises a TLLI structure having a second value.

1           19.     The system of claim 18, wherein the first value indicates one of a local  
2 TLLI, a foreign TLLI, and a random TLLI, and the second value indicates one of a local  
3 GRCI and a random GRCI.

1           20.     An article comprising at least one storage medium containing instructions  
2 that when executed cause a wireless access system to:  
3                   receive an indicator in a message sent by a mobile station to establish a  
4 data transfer session; and  
5                   select one of plural protocol stacks to use for communications over an air  
6 link between the wireless access system and the mobile station.

1           21.     The article of claim 20, wherein the instructions when executed cause the  
2 wireless access system to select one of plural protocol stacks by selecting a first protocol  
3 stack in response to the indicator having a first value and selecting a second protocol  
4 stack in response to the indicator having a second value.

1           22.     The article of claim 20, wherein the instructions when executed cause the  
2 wireless access system to select one of a GERAN protocol stack and an EGPRS protocol  
3 stack.

1           23.    The article of claim 20, wherein the instructions when executed cause the  
2   wireless access system to receive the indicator by receiving a Temporary Logical Link  
3   Identity (TLLI) structure.

1           24.    An article comprising at least one storage medium containing instructions  
2   that when executed cause a wireless access system to:  
3                   perform contention resolution with a first type mobile station using a first  
4   type of indicator;  
5                   communicate signaling according to a first wireless protocol with the first  
6   type of mobile station;  
7                   perform contention resolution with a second type of mobile station using a  
8   second type of indicator; and  
9                   communicate signaling according to a second wireless protocol with the  
10   second type of mobile station.

1           25.    The article of claim 24, wherein the instructions when executed cause the  
2   wireless access system to select one of plural types of protocol stacks based on which of  
3   the first and second types of indicators is received.